

L 45831-66 EWT(1)

ACC NR: AP6030582 SOURCE CODE: UR/0413/66/000/016/0064/0065

INVENTOR: Milyakh, A. N. ; Shidlovskiy, A. K.

ORG: none

TITLE: Converter of single-phase to three-phase current. Class 21, No. 184965

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 64-65

TOPIC TAGS: current converter, single phase current, three phase current

ABSTRACT: The proposed converter of single-phase to three-phase current in Fig. 1 is in the form of a transformer with single-phase and three-phase current windings which produce a rotating magnetic field. To obtain a symmetrical output voltage with a symmetrical layout of phase windings having an equal quantity of loops, the axis of the single-phase winding is shifted 90 electrical degrees in relation to the axis of one of the phases of the three-phase winding. A resistance whose value is equal to that of the reciprocal induction between the rotor winding and the corresponding phase winding of the stator (their axes being coincident) is connected in each phase of the three-phase winding. The single-phase winding is

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UDC: 621.314.254

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ACC NR: AP6030582

connected between the power line and the terminal of one of the phases of the three-phase winding. In a second variant, the proposed converter is equipped with a second single-phase winding whose axis is shifted 90 electrical degrees in relation to the axis of another of the phases of the three-phase winding. It is connected between the power line and the terminal of the second phase of the three-phase winding. A third variant of the converter provides for a switch in the circuit of single-phase windings. A fourth variant provides for equipping the converter with four single-phase windings. The axes of two of them are shifted 90 electrical degrees to one side, and the axes of the two others are shifted at the same angle but to the opposite side in relation to the axes of the three-phase winding phases with which they are linked. Finally, a fifth variant provides for a saturation choke in the single-phase circuit. Orig. art. has: 1 figure. [Translation] [DW]

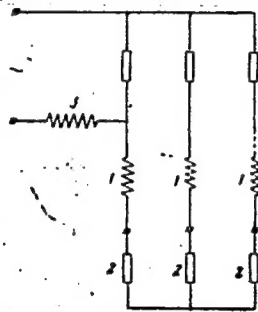


Fig. 1. Converter of single-phase into three-phase current.
1—Three-phase winding;
2—resistances; 3—single-phase winding

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SUB CODE: 09/ SUBM DATE: 02Mar62/

SHISHKIN, V.F., tekhnik; SHIDLOVSKIY, A.M., inzh.

Work practices at the "Krasnogorskaya" coal preparation plant
in Kuznetsk Basin. Obog. i brik. ugl. no.6:44-50 '58.
(MIRA 12:7)

1. Krasnogorskaya ugleobogatel'naya fabrika, Kuzbass.
(Kuznetsk Basin--Coal preparation)

RUBIN, V.M., inzh., and DOLGOVSEY, A.V., inzh.

Network of group-type secondary automatic reclosing for
substations with remote control. Pisk. sta. 35 no. 3-27-88
Mr '64. (MIRA 17:6)

07136-01 LWE(01/000001) RFP(0)

ACC NR: AP7001035

SOURCE CODE: UR/0371/66/000/003/0093/0096

KAL'CHENKO, G. T., SHIDLOVSKIY, A. Ya. Institute of Civil Aviation Engineers.
Im. Leninskiy komsomol (Institut inzhenerov Grazhdanskoy aviatsii)

"Solution of One Problem in Nonlinear Programming"

Riga, Izvestiya Akademii Nauk Lat. SSR, Ser. Fiz i Tekh Nauk, No 3, 66, pp 93-96

Abstract: The article presents an approximate method for solution of the problem of maximization of a nonlinear separable function with two-sided limitations on the unknowns and the fixed common lower boundary of the modulus of the difference of the unknowns. The possibility of applying this method to some problems of air traffic control in high-density zones is shown. Appropriate data can be stored in the operative memory of a "Ural-4" computer. Orig. art. has: 1 figure and 3 formulas. [JPRS: 38,421]

TOPIC TAGS: nonlinear programming, air traffic control system, computer / Ural-4 computer

SUB CODE: 12,17,09 / SUBM DATE: 02Feb66 / ORIG REF: 010

Card 1/1 e yk

SOV/80-59-1-37/44

AUTHORS: Gleym, V.G., Shelomov, I.K. and Shidlovskiy, B.R.

TITLE: On the Processes Leading to Drop Formation During Disruption of Bubbles on the Surface of Liquid - Gas Separation (O protsessakh, privodyashchikh k generatsii kapel' pri razryve puzyreya na poverkhnosti razdela zhidkost'-gaz)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 218-222 (USSR)

ABSTRACT: The study of phenomena occurring between the liquid and gas phases in the processes of boiling and bubbling necessitated the consideration of the geometry of bubbles in connection with the problems of their stability on the separation surface and generation of moisture during their bursts. The authors investigated the phenomenon theoretically and then carried out experiments for determination of the weight of drops in dependence on the bubble radius. The conclusions drawn are as follows: 1. The bubble on the surface, which separates liquid from gas, consists of two segments, the upper of which can be approximately considered as a hemisphere; 2. The formation of drops from the surface of liquid can take place only up to a certain critical value of the bubble radius; 3. There are definite relations between the kinetic energy of the formed

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SOV/80-59-1-37/44

On the Processes Leading to Drop Formation During Disruption of Bubbles on the Surface of Liquid - Gas Separation

drops, its mass, the height of its lift, and the radius of the bubble; 4. The formation of drops in alkaline media is energetically less probable than in neutral ones under the same other conditions.

There are 4 graphs, 1 set of photos, 1 table, and 5 references, 4 of which are Soviet and 1 English.

ASSOCIATION: Kafedra khimii Rostovskogo-na-Donu instituta inzhenerov zheleznodorozhnogo transporta (Chemistry Chair of the Rostov-na-Donu Institute of Railroad Transport Engineers)

SUBMITTED: July 19, 1957

Card 2/2

5(4)

SOV/80-32-5-20/52

AUTHORS: Gleyim, V.G., Shelomov, I.K., Shidlovskiy, B.B.

TITLE: The Stability of Electrolyte Foam

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1046-1050 (USSR)

ABSTRACT: The present article is based on [Refs 1, 2]. The value of absorption of diluted solutions of electrolytes is based on Gibbs' equation in the form proposed by Semenchenko [Ref 3]. In the surface-inactive field the stability of films increases in direct proportion with the coefficient of surface tension. A method has been proposed by Shidlovskiy ensuring the generation of a single bubble at the liquid-gas interface at a time. The apparatus for the method is shown in Figure 1. The mean time of existence of the bubbles was determined for NaCl, Na₂SO₄, NaOH, Na₂CO₃ and MgSO₄. The stability of the bubbles increases with the concentration to a value of about 500 mg-equ./l. At this point the decrease of the film thickness starts, which has been established by Deryagin [Ref 4]. The highest stability is produced by substances causing an alkaline reaction of the solution, like NaOH and Na₂CO₃. This is explained by the interaction of the

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The Stability of Electrolyte Foam

SOV/80-32-5-20/52

hydroxyl ions with the water molecules.

There are: 4 graphs, 2 tables, 1 diagram and 5 Soviet references.

ASSOCIATION: Kafedra khimii Rostovskogo-na-Donu instituta inzhenerov zh.-d. transporta (Chair of Chemistry of the Rostov-na-Donu . Institute of Engineers of Railroad Transportation)

SUBMITTED: October 7, 1957

Card 2/2

GLEYM, V.G., doktor tekhn.nauk; SHELOMOV, I.K., inzh.; SHIDLOVSKIY, B.P.,
inzh.

The effect of suspended matter on the stability of elementary
foam and carry-over of moisture. Teploenergetika 7 no.3:
17-20 Mr '60. (MIRA 13:5)

1. Rostovskiy institut inzhenerov zheleznodorozhnogo transporta.
(Chemical engineering) (Foam) (Bubbles)

SHIDLOVSKIY, B. R. Cand Chem Sci -- "Physicochemical processes on the surface of
~~phase~~ ^{of phases} separation ~~in~~ boiling and bubbling." Novocherkassk, 1960. (Min of Higher
Education USSR. Inst of Elementary Organic Compounds) (KL, 1-61, 184)

-75-

GLEYM, V.G.; SHIDLOVSKIY, B.R.

Conditions for minimum drop entrainment in boiling and
bubbling. Zhur.prikl.khim. 35 no.7:1533-1537 J1 '62.
(MIRA 15:8)

1. Kafedra khimii Rostovskogo-na-Donu instituta inzhenerov
zheleznodorozhnogo transporta.
(Ebullition)

GLEIM, V.G., prof., doktor tekhn. nauk; SHIDLOVSKIY, B.R., assistant;
AVER'YANOVA, L.N., kand. khim. nauk; GOLOVANOVA, T.G., assistant;
DYSKINA, Ye.G.

Iron corrosion in boiler waters with increased alkalinity.

Trudy RIIZHT no.28:120-138 '59.

(MIRA 16:7)

(Boilers--Corrosion)

ACCESSION NR: AP4010492

S/0080/64/037/001/0209/0211

AUTHORS: Gley, V.G.; Shidlovskiy, B.R.; Ryabinina, G.B.

TITLE: Elementary foam at elevated pressures

SOURCE: Zhurnal prikladnoy khimii, v.37, no.1, 1964, 209-211

TOPIC TAGS: Foam, pressure effect, bubble dimensions, vapor loss,
moisture loss

ABSTRACT: The change in the geometrical dimensions of bubbles with change in pressure is one of the factors in determining the time that a gas or vapor bubble (the elementary foam unit) exists at the surface of a liquid. Studies at 1 and 7 atmospheres pressures show that the length of time a bubble exists is independent of the pressure, decreases with decrease in its dimensions, and increases with contamination of the solution (colloidal Fe or Cr compounds); bubble dimensions are an inverse function of the pressure at which they are formed. For air bubbles on a glycerin surface the following relationship exists: $r = \frac{10.66}{P}$, where r is the radius of the bubble in mm.

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ACCESSION NR: AP4010492

and P is the pressure in atm. The bubble radius--pressure curve is shown in Fig.1. This information can be useful in calculating moisture loss with vapors of high and ultra-high parameters. Orig. art. has: 3 figures and 2 equations.

ASSOCIATION: None

SUBMITTED: 20Jun62

DATE ACQ: 14Feb64

ENCL: 01

SUB CODE: PH

NR REF SOV: 003

OTHER: 000

Card 2/3

KUSHNIR, F.V.; SHIDLOVSKIY, I.A.

Exciter for the frequency-modulated ultrashortwave transmitter.
Elektrosvyaz' 10 no.2:22-25 F '56. (MLRA 9:6)
(Radio, Shortwave--Transmitters and transmission)

SHIDLOVSKIY, M. S.; FEINE, V. V.; POLIKAROV, I. I.; DEKO, A. A.; ...;
OBRENSKIY, V. Ye.; VENETSIANOV, Ye. A.; MOVSESOV, N. S., and BELIBASH, B. A.;

"The Case for Explosion-proof Electrical Equipment in the Oil and Gas Industries."

report presented at the All-Union Scientific and Technical Conference on the
Electrical Equipment in Buildings and Outside Installations Liable to Explo-
sions, 14-19 April 1958, Stalino.
(Energet. Byulleten', 1958, No. 7, pp 29-33).

SHIDLOVSKIY, M. K.

U S S R :

Measurement of electromotive force of high-voltage polarization in amorphous selenium. M. K. Shidlovskii. Zhur. Tekh. Fiz. 23, 1355-56 (1953).—Measurements were made in the voltage range 10-6000 v. and at temps. -35 to 50° on 40 different samples of amorphous Se. The sp. resistance was 10^{12} - 10^{14} ohm cm. The ratio of polarization voltage/applied voltage decreased with increasing voltage and temp. The e.m.f. should be zero at 60°. S. P.

Effect of strong electric fields and temperature on the electroconductivity of amorphous selenium. M. R. Shidlovskii. *Doklady Akad. Nauk SSSR*, 1954, No. 10, 122-44; *Referat. Zhur., Fiz.* 1955, No. 19410; cf. *C.A.* 49, 9981b. — With the aid of an electrometric circuit the electrocond. of chemically pure amorphous Se was measured. Measurements were made for field strengths (E) 200–180,000 v./cm. and temps. -35 , -20 , 0 , 20 , and 50° . Specimens had the form of a disk with a diam. of 30 mm. and thicknesses of 0.2–1 mm. Specific resistance (ρ) of the specimens was $\sim 10^{11}$ – 10^{14} ohm cm. In the measurements the decrease of current was observed with time, induced by the reduction of the vol. charges (high-voltage polarization). E.m.f. of high voltage polarization has been taken into account with 8% accuracy. The dependence of ρ calcd. according to the current which was set up taking into account the e.m.f. of high-voltage polarization, or according to the initial current from the field strength, is expressed well by the formula of Frenkel: $\rho = \rho_0 \exp(-\alpha\sqrt{E})$ in fields up to 100–120 kv./cm. However, the experimentally defined value of the coeff. α differs from the theoretically defined. Temp. dependence of the electrocond. can be represented by the formula $\sigma = \sigma_0 \exp(-W/21T)$. The work of disson. of the carrier of the current W decreases with the increase of E from 0.608 to 0.315 e.v. on measurements taking into account the e.m.f. of high-voltage polarization. The reduction of the work of disson. is attributed to the effect of strong fields which reduce the potential barrier and facilitate the removal of the electrons from the atoms. True resistance of amorphous Se should be figured according to the residual current with calcn. of the e.m.f. of high-voltage polarization.

J. Rovtar Leach

USSR/Electronics - Conductivity of selenium

FD-568

Card 1/1 : Pub. 153 - 8/28

Author : Shidlovskiy, M. K.

Title : ~~Electrical conductivity of amorphous selenium in strong electrical fields~~
Electrical conductivity of amorphous selenium in strong electrical fields

Periodical : Zhur tekhn. fiz. 24, 837-844, May 1954

Abstract : Presents results of measurements on the electrical conductivity of amorphous selenium for field strength from 200 to 180,000 v/cm and at temperatures from - 35 to 50°C. Establishes that the dependence of the conductivity, as computed for a steady current taking into account the emf of the high-voltage polarization or for an initial current (for 0.001 sec.), upon the field strength agrees well with the Frankel formula in fields up to 100-120 kc/cm. Thanks Prof. D. N. Nasledov, who proposed this subject and offered advice.

1643

SNIDLOVSKIY, M. V. Gryzuny Adzharii (Mol.- faunist. ocherk)
Trudy Zool. in-ta (Akad nauk Gruz SSR) t. VIII, 1949, s. 187-223.-
rezюме na gruz yaz. - Bibliogr: s. 223.

SO: Letopis Zhurnal'nykh Statey, No. 29, Moskva, 1949

SHIDLOVSKIY, M.V.

Rodents of South Ossetia. Trudy Zool.inst. AN Gruz.SSR 10:187-222
'51. (MIRA 7:7)

(Ossetia--Rodentia) (Rodentia--Ossetia)

SHIDLOVSKIY, M.V.

The musk-shrew *Crocidura russula* Herm. among the shrews of Georgia.
Trudy Zool inst. AN Gruz. SSR 11:215-228 '53. (MIRA 9:7)
(Georgia--Shrews)

SHIDLOVSKIY, M.V.

Systematics and occurrence of the dormouse glis glis in
Georgia. Trudy Zool.inst.AN Gruz.SSR 13:47-61 '54.

(Georgia--Dormouse)

(MIRA 8:8)

SHIDLOVSKIY M.V.

Gerbil family (Rodentia, Gerbilidae) among the rodent fauna
of Georgia. Trudy Zool.inst.AN Gruz.SSR 13:63-69 '54.
(Georgia--Gerbils) (MLRA 8:8)

SHIDLOVSKIY, M.V.

Plan for changing to a preventive system of field rodent control.
Trudy probl. i tem.sov. no.5:76-77 '55. (MIRA 8:12)

1. Institut zoologii Akademii nauk Gruz.SSR.
(Rodent control)

SHIDLOVSKIY, M.V.

Systematics and distribution of the forest dormouse (*Dryomys nitedula*
Fall.) in Georgia. Trudy Inst.zool.AN Azerb.SSR 14:249-259 '56.
(Georgia--Dormouse) (MLRA 9:9)

SHIDLOVSKIY, M.V.

The small mammals of Klukhori District. Trudy Inst. zool. AN Gruz.
SSR 16:209-224 '58. (MIRA 11:12)
(Karachayevsk District--Mammals)

VEKUA, A.K.; SHIDLOVSKIY, M.V.

First finding of pika (Ochotona) in the Paleolithic of the Caucasus.
Soob. AN Gruz.SSR 21 no.3:285-288 S '58. (MIRA 12:4)

1. AN GruzSSR, Institut paleobiologii, Tbilisi. Predstavleno akademikom L.Sh. Davitashvili.
(Marneuli District--Pikas, Fossil)

SHIDLOVSKIY, Mikhail Vikent'yevich, kand. biol. nauk; KOBAKHIDZE, D.N.,
red.; KVARIANI, E.A., red. izd-va; TODUA, A.R., tekhn. red.

[Classification key of the rodents of Transcaucasia]Opredeli-
tel' gryzunov Zakavkaz'ia. Tbilisi, Izd-vo Akad. nauk Gruzin-
skoi SSR, 1962. 171 p. (MIRA 15:11)

1. Institut zoologii Akademii nauk Gruzinskoy SSR (for
Shidlovskiy).

(Transcaucasia—Rodentia)

SHIDLOVSKIY, P. G.

PA 5479

USSR/Academy of Sciences

May 1947

"The Economic System in the Academy of Sciences USSR,"
P. G. Shidlovskiy, 5½ pp

"Vest Akad Nauk SSSR" No 5

Reports 1947 budget for scientific and research fields increased 1½ billion rubles over 1946, a three-fold increase over 1940. Discusses assignment of budget to Academy of Sciences. Work of Academy receives priority with regard to appropriations; nevertheless, Academy must practice economy while stimulating development of Soviet resources.

5479

DRAZHIN, S.V.; SHIDLOVSKIY, P.R.

Public health system in Brest Province for twenty years. Zlray.
Belor. 6 no.3:11-13 Mr '60. (MIRA 13:5)
(BREST PROVINCE--PUBLIC HEALTH)

DRAZHIN, S.V.; SHIDLOVSKIY, P.R.

January resolution of the party and government in action. Zdrav.
Bel. 7 no.9:12-15 S '61. (MIRA 14:10)

1. Iz Brestskogo oblastnogo otdela zdravookhraneniya (zaveduyushchiy
S.V.Drazhin) i Brestskoy oblastnoy bol'nitsy (glavnyy vrach -
zasluzhennyy vrach BSSR V.G.Tishchenko).
(BREST PROVINCE--PUBLIC HEALTH)

PHASE I BOOK EXPLORATION SOV/3671

Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin
Tsifrovaya tekhnika i vychislitel'nyye ustroystva: [Sbornik]
[Digital techniques and computing devices: Collection of articles]
Moscow, Izdatel'stvo AN SSSR, 1959. 184 p. Errata slip inserted.
4,000 copies printed.

Ed.: M.S. Bruk, Corresponding Member, USSR Academy of Sciences;
Ed.: G.Yu. Shneybnok; Tech. Ed.: V.Y.
Volkhova.

PURPOSE: This collection of articles is intended for persons
specializing in computer technique.

COVERPAGE: Most of the work in this first issue of the Collection
of Articles of the Institute of Electronic Control Machines of the
Academy of Sciences, USSR, was carried out during 1958-1959,
and was dedicated to digital techniques. The Institute conducted
studies aimed at creating high-speed memory devices of large
capacity. One of the results of this work was improvement of the
M-2 computer by replacing its static storage device with ferrite
memory. Other articles concern the use of transistors in
digital computers, stability of analog computers equipped with
d-c operational amplifiers, and the use of the M-2 computer
in solving various problems. Future issues of this collection
of articles will present the results of work in digital tech-
niques in mathematical investigations, and in control machines and
systems of control which operate on the principle of digital
technique. Some personalities are mentioned in the articles.
References accompany some of the articles.

Authors: Yu.N. V.I. Zolotarevskiy, M.A. Kartsev, V.P. Konstantinov,
and R.P. Shidlovskiy. Ferrite Memory Device With 4096 Digits
of 36 binary bits. It has a 4096 word capacity, each word consisting
of 36 binary bits, two of which are reserve. The access time is

about 30 microsec; part of this cycle overlaps other computer
operations. The memory unit is equipped with 586 electron tubes
and 103 additional tubes are used in the power supply. These
specifications constitute great improvement over the previous
memory device, in which the operational electronics of the storage
the reserve magnetic drum storage had a capacity of 512 words, and
34-bit words each, and in which access time was from 37.5 to 50 or
more microsec. It was equipped with 644 electron tubes and
150 additional tubes were used in the power supply. The new
ferrite core memory device was developed, executed, and adjusted
at the Institute under the general direction of I.S. Bruk,
Corresponding Member of the Academy of Sciences, USSR. Prelimi-
nary studies were made in 1955-1956 under the direction of
O.V. Rosnitskiy. The essential part of the work was done under
the supervision of M.A. Kartsev by engineers T.M. Aleksandrini,
V.P. Kartsev, G.N. Gukhova, A.I. Zolotarevskiy, L.V. Ivanov,
V.P. Konstantinov, and R.P. Shidlovskiy; and
technicians I.I. Galymov, N. Zhukovskiy, V.M. Minayev, M.Ya.
Matanzon, Z.N. Sidyakova and V.S. Sokolov. The construction
group was under the supervision of A.M. Patrikovskiy, and the
assembly shop was under the supervision of A.D. Greshchukin and
the mechanical shop of the Institute.

Ivanov, L.V. and Ye.M. Filinov. Checking Installation Used in the
Production and Adjustment of Ferrite Memory Device 28
The following checking operations, which are considered indis-
pensable, were carried out during production of the ferrite
core memory device: selection of the cores according to es-
tablished requirements; testing the finished matrix frames;
checking the whole memory device. There is very little
experience at such operations concerning the methods and equipment for
carrying out such operations. This article describes the methods
acquired in developing such checking arrangements. This material
was done at the Institute, and the following persons in addition
to the authors of this article, participated in it: V.P. Kon-
stantinov, M.Ya. Matanzon and V.S. Sokolov. There are two
references, both Soviet.

Chernov, A.N. Utilization of a Dynamic Trigger Equipped With a
Junction Transistor in Arithmetic Device Circuits 42
The author briefly describes the results of his investigation
of possibilities of developing a dynamic trigger equipped with
a junction transistor and utilizing capacitance as its memory
device. He concludes that such triggers can be applied in logical
circuits and that their main advantage over static triggers is
their use of only one transistor instead of two. Their main
disadvantage is their low input resistance.

S/799/62/000/003/005/008

AUTHORS: Kaminskiy, V.N., Shidlovskiy, R.P.

TITLE: Constant memory equipments for specialized machines.

SOURCE: Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin. Tsifrovaya tekhnika i vychislitel'nyye ustroystva. no.3. 1962, 40-49.

TEXT: The paper describes two types of memory with a constant composition of the information. Both types are memory equipments with ferrite cores with a rectangular hysteresis loop. The capacity of the one type is 1,280 30-digit numbers, that of the other 1,088 12-digit numbers. The maximal times of revolution amount to 25 and 15 μ sec, respectively. All fundamental networks employ semiconductor diodes and triodes. It is noted that memory equipments with a constant composition of information permits the dependable storage and reproduction of information recorded therein. Information recorded in such memory equipment is not lost during random skips in the operation, either by the memory equipment or in the machine as a whole. This valuable quality opens broad perspectives for their utilization in specialized digital control machines that operate with real objects according to fixed programs. In comparison with other types of memory equipments employing ferrites of the same memory capacity, such memory equipments are significantly simpler and

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Constant memory equipments for specialized machines. S/799/62/000/003/005/008

contain a smaller number of hardware items. For identical memory capacities the first memory equipment described here requires for its construction a smaller number of cores and other accessories than the second. However, it cannot match the latter with respect to the time of revolution for a complete cycle. An optimal relationship between the number of addresses and numerical blocks in the memory matrix is determined in each specific case from the programming conditions, the required time of revolution for a full and average cycle, and by the practical possibility of the construction of the required commutators. Illustrations comprise the block schemes of the memory matrices of the two types of memory, the fundamental principles of operation of the memory cores, the fundamental scheme of a typical switching unit of the address commutator, a schematic network of the magnetization current generator, a schematic network of the read-out amplifier, and a time diagram of the operation of the two types. There are 10 figures.

Card 2/2

SHIDLOVSKIY, V. A.

"Microphysiological Study of Peculiarities of Secretion of Calcium Ions in the Heart in Irritation of Sympathetic Nerves," Dokl. AN SSSR, 59, No.1, 1948

Lab. Comparative Physiol., Moscow State U.

SHIDLOVSKIY, V. A.

Shidlovskiy, V. A. - "On the properties of the parasympathetic regulation of the heart in bony fish", Trudy Darvinakogo gos. zapovednika na Rybin. vodokhranilishche, Issue 1, 1949, p. 326-33.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

SHIDLOVSKIY, V. A.

Shidlovskiy, V. A. - "The Gol'ts reflex in bony fish", Trudy Darvinskogo gos. zapovednika na Rybin. vodokhranilishche, Issue 1, 1949, p. 334-35.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

SHIDLOVSKIY, V.A.; KOVALEVA, N.T.; VADKOVSKAYA, Yu.D.

Influence of the limitation of sleep and of emotional stress on
arterial pressure and the amount of adrenergic substances in the
blood of animals. Gip.bol. no.5:83-97 '58. (MIRA 13:5)
(SLEEP) (STRESS (PHYSIOLOGY)) (BLOOD PRESSURE)

BULYGIN, I.A., red.; ZAKUSOV, V.V., red.; KAPLANSKIY, S.Ya., red.; MUZYKANTOV, V.A., red.; TURPAYEV, T.M., red.; CHERKASOVA, L.S., red.; CHERNIGOVSKIY, V.N., red.; SHADURSKIY, K.S., red.; SHIDLOVSKIY, V.A., red.; SHIK, L.L., red.; MUZYKANTOV, V.A., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Summaries of reports] Tezisy dokladov. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. [Abstracts of reports in section meetings; physiology] Tezisy dokladov na sektionnykh zasedaniyakh; fiziologiya. 1959. 432 p. (MIRA 14:11)

1. Vsesoyuznoye obshchestvo fiziologov, biokhimikov i farmakologov.
9. s"yezd. 2. Kafedra fiziologii Moskovskogo meditsinskogo instituta im. I.M.Sechenova (for Shidlovskiy).
(PHYSIOLOGICAL SOCIETIES)

SHIDLOVSKIY, V. A. (Moskva)

O vyrazhenii ((Faktora budushchego)) v vegetativnykh komponentakh
uslovnogo refleksa

report submitted for the First Moscow Conference on Reticular Formation,
Moscow, 22-26 March 1960.

SHIDLOVSKIY, V.A.

Some characteristics of the change in arterial pulse pressure in conditioned food and defense reflexes; the problem of the vegetative components of conditioned reflexes. Trudy 1-go MMI 11:375-383 '61. (MIRA 15:5)

1. Kafedra normal'noy fiziologii (zav. - prof. P.K.Anokhin) 1-go
Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.
(CONDITIONED RESPONSE) (BLOOD PRESSURE)

SHIDLOVSKIY, V.A.

"On the expression of a "factor of future" in the vegetative components of a conditioned reflex."

Report submitted, but not presented at the 22nd International
Congress of Physiological Sciences.
Leiden, the Netherlands 10-17 Sep 1962

SHIDLOVSKIY, V.I., slesar'-remontnik

From practices of efficiency promoters. Tekst.prom.22 no.3:62-63
Mr '62. (MIRA 15:3)

1. Sumskaya sukonnaya fabrika "Krasnyy tekstil'shchik."
(Looms—Maintenance and repair)

SHIDLOVSKIY, V. P.

✓ 3745. Shidlovskii, V. P., Gas and fluid ejector pump design (in Russian), *Izv. Akad. Nauk SSSR Otd. tekhn. Nauk* no. 10, 119-123, Oct. 1954.

ph
20/10/54
In short mixing chambers (length < 10 to 15 diameters) the temperature of the ejected fluid can be supposed as constant along the whole length if the velocity of the ejecting gas is high. Momentum and energy relations and the equation of continuity yield an expression for the exit velocity which reaches its maximum value under certain critical conditions, as in the case of pure gas ejectors. Neglecting the ratio of the densities of gas and fluid against unity, many expressions for critical quantities assume a simple form. Two diagrams show the relation between the total pressure of the entering air and the total (stagnation) pressure of

the leaving mixture under critical conditions for pressures of 10 and 50 atm (142 and 711 psi, respectively) of the entering petroleum. Exact calculations show that neglected terms give differences in the third or fourth figure only. Critical parameters of the mixture depend mainly on the state of gas at the exit end of the mixing chamber, and so the results can be applied approximately also to the ejection of fine powder by gas. Author points out that, owing to some simplifying assumptions, the developed expressions should be taken as qualitative indications only, which should be verified by experiment.

A. Kuhelj, Yugoslavia

Mechanics Inst, AS USSR

SHIDLOVSKIY V.P.

24-58-3-29/38

AUTHOR: Shidlovskiy, V.P. (Moscow)

TITLE: Approximate Method of Analysis of the Gas Flow around a Flat Half-Airfoil at Large Mach Numbers (Priblizhennyy metod rascheta obtekaniya ploskogo poluprofilya gazovym potokom pri bol'shikh chislakh Macha)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 156-162 (USSR)

ABSTRACT: The supersonic flow around a sharp nosed half-profile at zero incidence in an ideal gas is considered. The motion proceeds without friction or heat transfer, but is accompanied by changes of entropy owing to shock waves. The relative profile thickness and the Mach number are assumed such that their squares compared with unity are very small or very large, respectively. The simplified equation of gas motion as proposed by Sears, W.R. ("General Theory of High Speed Aerodynamics", Princeton, 1954). The solutions adopted in the present paper are distinguished by a simplified substitution (Eq.(7)) assumed for the entropy function (defined as the pressure raised to the power of the reciprocal specific heat ratio and divided by the density). This

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24-53-3-29/38

Approximate Method of Analysis of the Gas Flow around a Flat
Half-Airfoil at Large Mach Numbers

substitution makes the square root of the entropy function into the quotient of a pure pressure function and a pure volume function. To determine both functions, the boundary conditions at the shock wave are used. These conditions (Eq.10) are the transformed Rankine-Hugoniot conditions. A comparison is given between the method here presented and the methods of expansion shock (e.g., Mahoney, "Critique of Shock-Expansion Theory", Journal of Aeronautical Sciences, 1955, Nr 10)(Ref.6). It is claimed that very close agreement is achieved at considerably less labour for a flow of a half-profile of 10% thickness at a Mach number of 5. There are 5 figures, including 4 graphs, 1 table, and 4 Soviet references, 2 English.

SUBMITTED: November 26, 1956.

Card 2/2 1. Airfoils--Supersonic flow 2. Gases--Application 3. Mathematical analysis

AUTHOR: Shidlovskiy, V.P. (Moscow)

SOV/24-58-9-11/31

TITLE: On the Calculation of Slipping in the Flow of a Viscous Gas Over a Semi-infinite Plane Plate (Ob uchete skol'zheniya pri obtekanii polubeskonechnoy ploskoy plastiny potokom vyazkogo gaza)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 9, pp 83 -- 90 (USSR)

ABSTRACT: In boundary layer theory there is known the classical solution for the problem of the plane parallel flow of a viscous fluid at constant velocity over an infinitely long plate. A similar solution can be obtained for gaseous flow but this becomes unsuitable near the leading edge of the plate because discontinuities in the velocity and temperature at the surface become more appreciable. The region of slipping is comparable in dimension with the molecular mean free path and if the pressure p_{∞} in the incident flow is sufficiently large then this region does not significantly affect the flow but if the pressure is lowered the part played by the region in slipping increases strongly. In this paper, such a region of flow is discussed in which the thickness δ of the boundary layer is less

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SOV/24-58-9-11/31

On the Calculation of Slipping in the Flow of a Viscous Gas Over a Semi-infinite Plane Plate

than the molecular mean free path l and the ratio l/δ cannot be neglected. A solution is constructed which is valid in this region and permits the evaluation of the influence of slipping on the characteristics of the flow. It is assumed that the gas is ideal but the Prandtl number $P = 1$ and the coefficient of dynamic viscosity is proportional to the absolute temperature. Solutions are constructed for the cases of no heat transfer at the surface and for constant temperature on the surface. For the first problem, a large velocity of slipping leads to a weak variation in the temperature of the plate and the friction factor is virtually unchanged. The relative velocity of slipping increases with the Mach number of the incidence of flow. In the second problem, the temperature of the gas near the surface and the velocity of slipping depends not only on the Mach number but also on the relative temperature of the plate. The influence of the velocity of slipping is less significant when the temperature of the plate is

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SOV/24-58-9-11/31

On the Calculation of Slipping in the Flow of a Viscous Gas Over
a Semi-infinite Plane Plate

less than that of the gas than when it is greater. The
friction factor at the surface to the accuracy of the
calculations remains unchanged. There are 2 figures and
6 references, 5 of which are Soviet and 1 English.

SUBMITTED: April 30, 1958

Card 3/3

10.1.600

77096
SOV/40-24-1-24/28

AUTHOR: Shidlovskiy, V. P. (Moscow)

TITLE: Laminar Boundary Layer for an Infinite Disc Rotating
in a Gas

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol 24,
Nr 1, pp 161-164 (USSR)

ABSTRACT: Karman's problem (ZAMM, 1921, Vol 1, p 235) of an
infinite disc (plate) rotating with constant angular
speed ω in a viscous incompressible fluid with a lami-
nar boundary layer flow is one case in which the Navier-
Stokes equations have been solved exactly. The flow
of heat in a fluid when the temperature on the surface
of the disc is constant has been solved by Millsaps and
Pohlhausen (J. of Aero. Sci., 1952, Vol 19, Nr 2). In
this paper, the author shows how the solution of the
analogous gasdynamical problem can be reduced to these
two problems. The gas is assumed to be perfect, the
flow to be steady and independent of θ (the x -axis is

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Laminar Boundary Layer for an Infinite
Disc Rotating in a Gas

77296
SOV/40-24-1-24/28

directed along the axis of rotation) and that the so-called 'second coefficient of viscosity' is a constant multiple of the basic coefficient of viscosity μ . There is no influx of heat from without and internal forces are neglected. The boundary conditions for the temperature T and velocity components u_r and

$$\theta \quad \text{are: } T(r, 0, 0) = T_w, \quad u_r(r, 0, 0) = 0, \quad u_\theta(r, 0, 0) = r\omega, \quad u_z(r, 0, 0) = 0 \quad (1.1) \\ T(r, 0, \infty) = T_\infty, \quad u_r(r, 0, \infty) = 0, \quad u_\theta(r, 0, \infty) = 0, \quad u_z(r, 0, \infty) = 0$$

It is also assumed that the Prandtl number $\sigma = \mu c_p / \lambda$ is constant and that $\mu / \mu_\infty = (T / T_\infty)^n$. Using dimensionless variables, the author writes an equation of continuity, three equations of motion, an energy equation, and an equation of state. This involves the fundamental dimensionless quantity:

$$K = c_p T_\infty \nu_\infty^{-1} \omega^{-1} \quad (2.8)$$

which is related to the Reynolds and Mach numbers by:

$$K = \frac{1}{\alpha - 1} R_\infty(r) M_\infty^{-2}(r)$$

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Disc Rotating in a Gas

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SOV/40-24-1-24/28

The boundary layer equations are obtained from the mentioned equations by letting $K \rightarrow \infty$. Under certain additional assumptions (e.g., $n=1$) and manipulations, the author then reduces the system of equations for $K \rightarrow \infty$ to those of Karman, and Millsaps and Pohlhausen. For $\sigma = .72$, it is shown that the stress on the surface of the disc is:

$$C_M = - \frac{2}{\rho_\infty^2 r_0^2 \omega^2 \pi r_0^2} \int_0^{r_0} 2\pi r^2 \tau_{z0} dr = - \frac{G'(0)}{\sqrt{R_\infty(r_0)}} = \frac{0.616}{\sqrt{R_\infty(r_0)}} \quad (4.2)$$

where G' is related to the dimensionless form of θ . The force moment coefficient for one side of a disc of radius r_0 is found to be $C_M = .616/\sqrt{R_\infty(r_0)}$. Also cited are formulas characterizing the heat flow. The author notes the similarity of these results to the corresponding formulas for an incompressible fluid. There are 5 references, 1 German, 2 U.S., and 2 Soviet. November 4, 1959

SUBMITTED:

Card 3/3

SHIDLOVSKIY, V.P. (Moskva)

Motion of a viscous gas caused by the rotation of a disk. i
PMTF no. 1:10-16 Ja-F '61. (MIRA 14:6)
(Gas flow) (Disks, Rotating)

31243
S/207/61/000/005/002/015
D237/D303

24.7120

AUTHOR: Shidlovskiy, V.P. (Moscow)

TITLE: Some problems of motion of a conducting viscous gas
in the presence of electric and magnetic fields

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki,
no. 5, 1961, 10 - 15

TEXT: The author considers here a stationary laminar flow of gas between two infinitely long coaxial cylinders, rotating with angular velocities ω_0 and ω_1 in presence of electric and magnetic fields. Two cases are considered: First - radial electric field \underline{E} and axial magnetic field \underline{H} ; second - axial \underline{E} and circular \underline{H} , the latter being parallel to the flow velocity vector. It is assumed that flow and field parameters are only r - dependent, and that viscosity of gas μ and its electrical conductivity σ are both power functions of the heat content i . Also, $p/\rho = f(i)$. The initial equations are

$$\rho(\mathbf{u} \cdot \nabla) \mathbf{u} - \mu_e (\mathbf{H} \cdot \nabla) \mathbf{H} = -\nabla \left(p + \frac{1}{2} \mu_e H^2 \right) + \Delta \tau_{jk} \quad (1.1)$$

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Some problems of motion of a ...

31243
S/207/61/000/005/002/015
D237/D303

$$\rho(u \cdot \nabla) i = (u \cdot \nabla) p + \frac{1}{P} \nabla(\mu \nabla i) + \tau_{jk} \nabla u + (\nabla \times H) \left(\frac{\Delta \times H}{\sigma} - \mu_e u \times H \right) \quad (1.1)$$

$$\nabla \times (u \times H) - \nabla \times \left[\frac{1}{\mu_e \sigma} (\nabla \times H) \right] = 0, \quad \nabla(\rho u) = 0, \quad p = p(i) \quad (1.1)$$

($\mu_e = \text{const}, P = \text{const}$)

where u = flow velocity vector, μ_e - magnetic permeability coefficient, τ_{jk} - viscous stress tensor, P - Prandtl no. Using cylindrical coordinates, the author obtains for the case $H \equiv H_z$, first integrals

$$\mu r^3 \frac{d\omega}{dr} = a, \quad \frac{r}{\sigma} \frac{dH}{dr} = b \quad (a, b, - \text{const}) \quad (2.4)$$

$$r\mu \frac{di}{dr} + aPN^2\omega + bP \frac{N^2}{M_m^2} \frac{R_h}{R_m} H = d \quad (2.5)$$

and $\mu = i^n, \quad \sigma = i^m \quad (2.6)$

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S/207/61/000/005/002/015
D237/D303

Some problems of motion of a ...

with $t = \ln r$, $y = i^{n+1}$, gives

$$\frac{d^2 y}{dt^2} + A^2 y^{-\frac{n}{n+1}} e^{-2t} + B^2 y^{\frac{m}{n+1}} = 0 \quad (2.7)$$

$$A^2 = a^2 P (n+1) N^2, \quad B^2 = b^2 P (n+1) \frac{N^2 R_h}{M_m^2 R_m}$$

With $y(t)$ determined, Eq. (2.4) on integration gives $\omega(t)$ and $H(t)$ is found similarly, and a and b are found by successive approximations. For $H \equiv H_0$, first integrals are

$$\mu r^3 \frac{d\omega}{dr} = a', \quad \frac{1}{r^3} \frac{d(rH)}{dr} = b' \quad (3.4)$$

$$r\mu \frac{di}{dr} + a' P N^2 \omega + b' P \frac{N^2 R_h}{M_m^2 R_m} rH = d' \quad (3.5)$$

which with Eq. (2.6) give

$$\frac{d^2 y}{dt^2} + A'^2 y^{-\frac{n}{n+1}} e^{-2t} + B'^2 y^{\frac{m}{n+1}} e^{2t} = 0 \quad (3.6)$$

$$A'^2 = a'^2 P (n+1) N^2, \quad B'^2 = b'^2 P (n+1) \frac{N^2 R_h}{M_m^2 R_m}$$

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Some problems of motion of a ...

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S/207/61/000/005/002/015
D237/D303

If $\varepsilon = M_m^2 R_m/R_h$ is small, in Eqs. (2.7) and (3.6) $A = A' = 0$. If in addition $m = n + 1$, then

$$y = C_1 \sin Bt + C_2 \cos Bt \quad (4.1)$$

is a solution of Eq. (2.7). In case of $H \equiv H_0$, the above simplifications result in Bessel's equation of zero order. A numerical example is solved and discussed. There are 5 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: C.R. Illingworth, Some solutions of the equations of flow of a viscous compressible fluid. Proceedings of the Cambridge Phil. Soc., 1950, v. 46, 469 - 478.

SUBMITTED: May 16, 1961

Card 4/4

SHIDLOVSKIY, V.P. (Moskva)

Effect of slipping on the behaviour of laminar boundary layer in a hypersonic flow. Inzh.zhur. 1 no.2:52-59 '61. (MIRA 14:12)

1. Institut mekhaniki AN SSSR.
(Boundary layer) (Aerodynamics, Hypersonic)

LOYTSYANSKIY, Lev Gerasimovich; SHIDLOVSKIY, V.P., red.; MURASHOVA,
N.Ya., tekhn. red.

[The laminary boundary layer] Laminarnyi pogranichnyi sloi. Mo-
skva, Gos. izd-vo fiziko-matem. lit-ry, 1962. 479 p.
(MIRA 16:1)

(Boundary layer)

37674

S/179/62/000/002/003/012

E031/E435

10.1410

AUTHOR: Shidlovskiy, V.P. (Moscow)

TITLE: On the problem of the supersonic flow round a sphere
of a slightly rarefied gas

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Mekhanika i mashinostroyeniye,
no.2, 1962, 17-24

TEXT: The Navier-Stokes equations are used to describe the motion of the gas in the layer between the sphere and the shock wave (assumed to be virtually spherical in shape). The motion is assumed to be steady and axisymmetric. The case of a large temperature drop through the viscous layer is considered. The viscosity is related to the heat capacity by a power law, in which the exponent varies from unity near the surface of the sphere to $1/2$ on the shock wave. The boundary conditions on the surface of the sphere are given in the usual form and the conditions on the outer boundary coincide with those on the shock wave taking into account the effect of viscosity and heat
Card 1/2

On the problem of the supersonic ...

S/179/62/000/002/003/012
E031/E435

conductivity. A method of solution is proposed in which it is not necessary to assume either that the density is constant or that the polar angle is very small. In this treatment the Knudsen number K is of the order 0.1 to 0.01 and the Mach number of the incident flow is of the order of $1/K$. The surface of the sphere is assumed to be cooled. The solution is only valid for small values of $\epsilon = (\kappa - 1)/(\kappa + 1)$. It is acknowledged that there is a danger in the present method that the shock wave cannot be considered as a discrete surface of discontinuity. The equations are first solved for the pressure and the heat capacity and then in turn the density and the drag and heat transfer coefficient at the surface of the sphere are determined. The fundamental similarity parameter of the flow is $\kappa M_\infty^2 / R_\infty$. There are 4 figures.

SUBMITTED: December 7, 1961

Card 2/2

R/008/62/013/003/005/006
D272/D308

44.2120.
247000
AUTHOR:

Shidlovskiy, V.P.

TITLE:

Motion of an electrically conducting viscous gas in the vicinity of an infinite porous plate

PERIODICAL:

Studii și cercetări de mecanică aplicată, no. 3, 1962, 701 - 708

TEXT: The author studies the flow of a viscous compressible gas, having infinite electrical conductivity, through an infinite porous plate placed in a magnetic field perpendicular to it. The general fundamental equations were obtained in an earlier study by the author. The equations are reduced to a single non-linear second order differential equation, where the unknown function is the normal component of the velocity. The solution of this equation is simplified by assuming the Prandtl number to be equal to $3/4$ (corresponding to air). It is impossible to find an analytical solution and approximate solutions in the vicinity of the plate as well as asymptotic solutions are considered. The flow was found to depend on the hydrodynamic and magnetic Mach numbers, and several particular cases are considered. √B.

Card 1/2

L 17454-63

EMT(1)/BDS AFFTC/ASD

ACCESSION NR: AP3006125

S/0207/63/000/004/0074/0077

AUTHOR: Shidlovskiy, V. P. (Moscow) 51

TITLE: A problem of gas point mass escape and its solution by means of the kinetic theory

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 74-77

TOPIC TAGS: point mass escape, kinetic theory, Boltzmann equation, nonequilibrium distribution, potential power field, molecular model, monatomic gas

ABSTRACT: An unsteady motion of a monatomic gas, corresponding to the escape of a point mass into vacuum, was studied by means of the kinetic theory of flows on the basis of the solution of the Boltzmann equation in the case of nonequilibrium initial distribution. Collisions among the molecules themselves were neglected. The more general case of escape in the presence of a potential power field invariable with time was also considered. It was found that the Boltzmann equation admits an exact solution with similar properties if the power field is constant in value and direction. A molecular model of solid, elastic, and smooth spheres was used for the study of both cases. It is concluded that the solution may be extended to the case of a mixture of monatomic gases.

Card 1/2

L 17454-63

ACCESSION NR: AP3006125

Orig. art. has: 28 formulas.

ASSOCIATION: none

SUBMITTED: 11Mar63

DATE ACQ: 11Sep63

ENCL: 00

SUB CODE: AI

NO REF SOV: 002

OTHER: 001

Card 2/2

SHIDLOVSKIY, V.P. (Moskva)

Some problems of the unsteady motion of an electroconducting
viscous fluid in a magnetic field. Rev mec appl 8 no.5:
757-767 '63.

SHIDLOVSKY, V. P. (Moscow)

"Kinetic analysis of couette plasma flow".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

SHIDLOVSKY, V. P.

"Some problems of nose drag minimization for bodies in free molecule flow."

paper presented at 4th Intl Symp, Rarefied Gas Dynamics, Toronto, 14-17 Jul 64.

Inst of Mechanics, AS USSR, Moscow.

L 15649-65 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1)
 ACCESSION NR: AP4049578 ASD(f)-2/AEDC/ASD-3

Pd-4 AFFTC/AFMDC/AEDC(a)/
 S/0258/64/004/004/0721/0727

AUTHOR: Shidlovskiy, V. P. (Moscow)

TITLE: Cylindrical Couette flow in weakly rarefied gas

SOURCE: Inzhenernyy zhurnal, v. 4, no. 4, 1964, 721-727

TOPIC TAGS: Couette flow, rarefied gas motion, steady flow

ABSTRACT: The author considers steady-state motion of a gas between two coaxial cylinders where the inner cylinder is at rest and the outer one rotates with constant angular velocity Ω . The temperatures of the surface touching the gas are constant on the periphery, but different for the different cylinders. Using a cylindrical system of coordinates, the equation of momentum and the equation of energy for the problem have the form

$$\frac{dp}{dr} = \rho \frac{v^2}{r}, \quad (1)$$

$$\frac{d}{dr} \left[r^2 \mu \left(\frac{dv}{dr} - \frac{v}{r} \right) \right] = 0, \quad (2)$$

$$\frac{d}{dr} \left(r^2 \frac{dh}{dr} \right) + r \Omega^2 \mu \left(\frac{dv}{dr} - \frac{v}{r} \right)^2 = 0. \quad (3)$$

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L 15649-65

ACCESSION NR: AP4049578

where p is pressure, ρ is density, v is the peripheral component of velocity of the motion of the gas, h is its enthalpy, μ is viscosity, and σ is the Prandtl number. The system is closed with the help of the equation of state of an ideal gas and the equation of relation between viscosity and enthalpy. The author treats the case where the coefficient of viscosity undergoes comparatively little change in the entire region of flow between the cylinders. This permits the desired quantities to be expressed in powers of a related small parameter. The basic singularities of the given motion can be correctly analyzed by the proposed method for sufficiently large characteristic Mach numbers. The method was applied to computation of plane Couette flow without consideration of the effects of rarefaction of the gas, and the approximate results thus obtained compared with precise ones for temperature fall between plates $0.8 \leq T_a/T_b \leq 1.2$ and Mach number, for the relative velocity, equal to $3\sqrt{6}/2 \approx 3.674$. Considering only the first two approximations, the maximal error for determining the velocity was found not to exceed 2%, and for determining temperature in the flow — 5%. On the basis of the derived formula, the author computes the stress of friction τ with consideration of slipping and temperature jump. Orig. art. has: 2 figures and 23 formulas.

ASSOCIATION: Institut mekhaniki AN SSSR (Institute of Mechanics, AN SSSR)

Card 2/3

L 15649-65
ACCESSION NR: AP4049578

SUBMITTED: 01Apr64

SUB CODE: ME

NO REF SOV: 000

0
ENCL: 00

OTHER: 005

Card 3/3

SHIDLOVSKIY, Vsevolod Pavlovich; SHAKHOV, Ye.M., red.

[Introduction to the dynamics of rarefied gas] Vvedenie
v dinamiku razrezhnogo gaza. Moskva, Nauka, 1965.
217 p. (MIRA 18:9)

L 31546-66 EMT(1)/ETC(f) IJP(c) AT
ACC NR: AP6009047 SOURCE CODE: UR/0207/66/000/001/0021/0031

AUTHOR: Shidlovskiy, V. P. (Moscow)

ORG: none

TITLE: Kinetic analysis of plasma Couette flow in an electric field

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 21-31

TOPIC TAGS: plasma flow, Couette flow, boundary layer flow, rarefied plasma, ionized plasma, boundary value problem

ABSTRACT: The author investigates steady-state flow of a fully ionized plasma between parallel plates in the presence of an electric field. The distribution functions of ions and electrons are determined from the Boltzmann kinetic equations, supplemented by equations for the electric field. The solution is constructed by means of one of the variations of the method of moments, and it is assumed that the momentum transfer is achieved only by the ions, and the heat transfer by the electrons. The analysis is performed taking into account the close collisions between particles for an arbitrary degree of plasma rarefaction. An example is given for calculating the basic flow characteristics. Boundary value problems, related to the presence of hard surfaces in the flow, have a much smaller practical importance in plasma dynamics than in gas dynamics. This is explained by the fact that plasma may exist only at very high temperatures the action of which causes some degree of

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L 31546-66

ACC NR: AP6009047

destruction of most materials. As a rule, plasma is confined within certain boundaries not by solid walls, but by intense magnetic fields. However, an investigation of problems with boundary surfaces still presents a certain interest for the case of plasma. An approximate solution to one of the simplest problems of this kind is given. Orig. art. has: 4 figures and 51 formulas.

SUB CODE: 20 / SUBM DATE: 06Mar64 / ORIG REF: 001 / OTH REF: 003

Card 2/2 *LC*

L 34385-66 EWP(m)

ACC NR: AP6022638

SOURCE CODE: RU /0019/66/011/003/0635/0641

AUTHOR: Shidlovskiy, V. P. (Moscow)

ORG: Computing Center, AN SSSR (Vychislitel'nyy tsentr' AN SSSR)

TITLE: Formulation of problems in the theory of highly rarefied, ionized gas flow /
past charged bodies

SOURCE: Revue Roumaine des sciences techniques. Serie de mecanique appliquee, v. 11,
no. 3, 1966, 635-641

TOPIC TAGS: aerodynamics, rarefied gas, ionized gas, plasma flow, Boltzmann equation,
kinetic equation

ABSTRACT: The flow of highly rarefied, fully ionized plasma past charged bodies was studied. The analysis, limited to the case of absence of a magnetic field, is based on a system of equations formed by the Boltzmann equation and by two kinetic equations which Vlasov introduced into the study of plasma oscillations. As the main difficulty lies in the nonlinearity of these equations, two possible simplifying methods are presented. The first method involves the linearization of these equations while the second is related to solution of the kinetic equations with a given functional form of the potential Φ . Analysis shows that under certain conditions the second of the two approximate methods yields better results, since with a successful choice of the function $\Phi(x_1, x_2, x_3)$ and even without successive iterations, it yields

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L 34385-66

ACC NR: AP6022638

a sufficiently accurate physical representation of the processes, including a description of the oscillating variations of the characteristics of slowly moving particles. The difficulties related to this method are of a technical nature and pertain to the calculation of the integrals which determine the macroscopic parameters of ionized gas components. Orig. art. has: 14 formulas. [AB]

SUB CODE: 20/ SUBM DATE: 23Nov65/ ORIG REF: 001/ OTH REF: 001/ ATD PRESS:

5034

Card 2/2

92

GALENKO, M.; SHIDLOVSKIY, Yu. M.

Performance of grain-harvesting machinery at increased speeds.
Tekh. v sel'khoz. 20 no.6:39-43 Je '60. (MIRA 13:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Grain--Harvesting)

NIKITENKO, I.T.; GOLENKO, M.D.; SHIDLOVSKIY, Yu.M.

Experimental investigation of the process of removing broken
straw from the combine. Trakt.i sel'khoz mash. 30 no.10:
16-18 0 '60. (MIRA 13:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii
i elektrifikatsii sel'skogo khozyaystva.
(Grain--Harvesting) (Straw)

NIKITENKO, I.T., nauchnyy sotrudnik; ~~SHIDLOVSKIY~~, Yu.M. [Shydlovs'kyi, IU.M.],
nauchnyy sotrudnik; GORSHKOV, A.P. [Horshkov, A.P.], nauchnyy
sotrudnik; KAPLIN, I.M., nauchnyy sotrudnik

Continuous harvesting of grain. Mekh. sil'. hosp. 12 no. 6:5-8
Je '61. (MIRA 14:5)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Grain—Harvesting)

NIKITENKO, I.T., kand.sel'skokhozyaystvennykh nauk; SHIDLOVSKIY, Yu.M., inzh.;
KAPLIN, I.N., inzh.; GORSHKOV, A.P., inzh. _____

Continuous-flow harvesting of grain by combines with straw
chopping. Mekh. i elek. sots. sel'skoz. 20 no.3:6-9 '62.

(MIRA 15:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii
i elektrifikatsii sel'skogo khozyaystva.

(Grain--Harvesting)

(Harvesting machinery)

SHIDOV, L.I.

Number of nonspecial subgroups of finite groups. Soub. AN Gruz.
SSR 32 no.3:557-564 D '63. (MIRA 17:11)

1. Kabardino-Balkarskiy gosudarstvennyy universitet. Predstavleno
akademikom G.S. Chogoshvili.

1111 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044

Some characteristics of insoluble finfo groups. Sobh. AN Gruz. SSR
36 no.3:591-598 1962. (KIRA 13:3)

2. Kabardino-Balkarskiy gosudarstvennyy universitet. Submitted November 16, 1983.

Hoofed animals of the Byalovezhska Pushcha
SABLINA, T.B.; SHESTAKOVA, G.S., doktor biologicheskikh nauk, redaktor;
SHIDROVSKAYA, O.G.; AUZAN, N.P., tekhnicheskiiy redaktor

Hoofed animals of the Byalovezhska Pushcha. Trudy Inst.morf.zhiv.
no.15:3-191 '55. (MLRA 8:11)
(Byalovezhska Pushcha--Ungulata)

S/129/63/000/001/003/017
EO73/E335

AUTHORS: Rotenshteyn, B.F., Muntyanu, A.P. and Shif, A.F.

TITLE: Compound ferromagnetics with high internal friction

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no. 1, 1963, 12 - 15

TEXT: A method of increasing the internal friction of non-ferromagnetic metals by depositing electrolytically a coating of a ferromagnetic (Ni or an Fe-Ni alloy) is described. Nickel-plating took place in a bath containing 140 g/l. NiSO_4 , 20 g/l. NiCl_2 and 20 g/l. H_3BO_3 . 30 g/l. ammonium sulphate or 4 g/l. dinaphthalene sulphonic acid (2.6-2.7) were added to the solution; hydrogen index 5.2, current density 1 A/cm². Plating with an Fe-Ni alloy was in a bath containing 21.8 g/l. $\text{NiSO}_4 \cdot 6\text{H}_2\text{O}$, 9.7 g/l. NaCl, 25 g/l. H_3BO_3 , 0.83 g/l. saccharin, adding $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ in the quantity required to obtain an alloy of the desired composition. The internal friction was measured by the torsion-pendulum method with a varying stress-amplitude up to 2.5 kg/mm², applying a DC

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S/129/63/000/001/003/017
E073/E535

Compound ferromagnetics

longitudinal magnetic field of up to 600 Oe. The specimens were heated to 220 °C after being fitted into the instrument and held for 1 h at that temperature. Results: 1) internal friction is almost independent of amplitude under conditions of saturation-magnetization (600 Oe); 2) there is a definite stress at which the internal friction is highest for each magnitude of the magnetic field; 3) there is an intensity of the longitudinal magnetic field, for each stress value, at which the internal friction will have the highest value and the magnitude of the magnetic field will be the lower the higher the stress-amplitude; 4) the value H_{max} at which the internal friction is highest for a given stress-amplitude depends on the properties of the metal in the core of the specimen; the internal friction of combined ferromagnetics depends to a great extent on the amplitude of the force; also, the dependence is more pronounced in the magnetized than in the demagnetized state. For commercial iron, Fe-Ni alloys with up to 50% Ni and for pure annealed Ni the internal friction in the Ni is highest for an amplitude between 1 and 2 kg/mm².

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Compound ferromagnetics

S/129/65/000/001/003/017
EO73/E335.

$Q^{-1} = 1910 \times 10^{-5}$ for commercial iron and 1590×10^{-5} for nickel.
A compound ferromagnetic with a layer of Fe-Ni alloy has an internal friction comparable with that of an Fe-Ni alloy; holding of such materials in vacuum at high temperatures appears to give them higher internal-friction values than those obtained in the here described work. There are 5 figures.

ASSOCIATION: Timishoarskiy politekhnicheskiy institut (Rumyniya)
(Timisoara Polytechnical Institute, Romania)

Card 3/3

KOMAROV, V. A.; DROZDOVA, V. M.; SHIF, G. A.

Metallic Oxides

Determination of the starting temperature of reduction of metallic oxides with hydrogen.

Uch. zap. Len. un., No. 150, 1951.

9. Monthly List of Russian Accessions, Library of Congress, November 1952 ~~1953~~, Uncl.

SHIF, G.A.

Shaftless apparatus for gate valves., Stroi.truboprov. 7
no.2:31 F '62. (MIRA 15:3)

1. Nachal'nik stroitel'nogo uchastka No.4 tresta Omsknefteprovodstroy
g. Novosibirsk.
(Petroleum---Pipelines)

KOZYREV, N.T., inzh.; LITVINENKO, M.P., inzh.; SOROKIN, Ye.A., inzh.;
SHIF, G.S., inzh.

Bottom-dump skip. Gor. zhur. no.7:62-63 J1 '61.
(MIRA 15:2)
(Mine hoisting)

SHIF, I. I.; PETROVA, V. G.

"The development of cognitive activity of mentally retarded children in the process of learning."

report submitted for Intl Cong on Scientific Study of Mental Retardation, Copenhagen, 7-14 Aug 64.

SHIF, I.M., kandidat tekhnicheskikh nauk.

Principles of kinematics involved in threading by two rollers
(axial shifts). Trudy Ural.politekh.inst. no.5:149-170 '56.
(Screw cutting) (MLBA 9:11)

S/122/60/000/007/011/011
A161/A029

AUTHOR: Shif, I.M., Candidate of Technical Sciences, Docent
TITLE: Scientific-Technical Conference on Strengthening Technology
PERIODICAL: Vestnik mashinostroyeniya, 1960, No. 7, pp. 80 - 81

TEXT: A conference was organized in March 1960 in Perm' by the Perm' sov-narkhoz and the oblast' board of NTO MASHFROM jointly with research and educational organizations on problems of theory and practice of machine part surface strengthening by plastic deformation. Delegates from the machine building industry from Moscow, Sverdlovsk, Perm' and other places were present. Doctor of Technical Sciences, Professor I.V. Kudryavtsev (TsNIITMASH, Moscow), reviewed the methods of work hardening and its effect in large machine parts and on the fatigue strength of parts in corrosive environment, stating that it materially raises the fatigue strength and durability of parts in high temperatures. Plastic strengthening is highly effective for parts with high stress concentrations, e.g., threaded parts. TsNIITMASH has suggested a new method of threading and strengthening already cut threads by rolling with a vibrating roller. This method is recommended for medium and large parts from 50 to 1,000 - 1,500 mm in dia-

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S/122/60/000/007/011/011
A161/A029

Scientific-Technical Conference on Strengthening Technology

meter. It has been discovered that the effect of this method increases with increasing steel strength and stress concentration coefficient. Candidate of Technical Sciences L.M. Shkol'nik (TsNII MPS, Moscow) reported on the practical use of work hardening in railroad transport and on standardization of rolling stock parts. State standards require shot blasting for chassis springs and automatic couplings, hangers, railroad car axles and portions of locomotive axles. Investigations at TsNIITMASH and TsNII MPS revealed that a deep work hardened layer is not absolutely necessary to obtain by rolling, particularly in parts with stress concentrators. Engineer G.Z. Zaytsev (TsNIITMASH, Moscow) reported on results of an investigation of the technico-economical effect of surface work hardening carried out at 31 plants in four machine building industry branches. The conditional annual economy is evaluated to be 260.3 million rubles, not including the economy of high-alloy steel replaced by low-alloy grades or carbon steel, reduced metal consumption and machine weight, etc. Engineer V.M. Braslavskiy (UZTM, Sverdlovsk) reported on the application of work hardening and rolling in heavy machine building where a deep hardened layer (up to 25 - 28 mm) is produced by rolling and striking, and the surface hardness is raised by 30 - 50%. Special

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S/122/60/000/007/011/011
A161/A029

Scientific-Technical Conference on Strengthening Technology

devices are developed for strengthening parts of 500 to 1,000 mm in diameter and up to 12,000 mm long. Strengthening is obligatory for many parts. Rolling of outer or inner surfaces is also used for surface finish to 7th and 8th finish class. Combination of cutting for rough finish with rolling for final finish on the same machine tool cuts the total work cycle by 30 - 40%. Candidate of Technical Sciences O.O. Kulikov (TsNIITMASH) reported on the experience of his institute with strengthening the rods of stamping hammers by rolling with rollers. It more than doubled the life of rods. Candidate of Technical Sciences Docent I.M. Shif (Gosudapstvennyy universitet, Perm' - Perm' State University) reported on results of investigations of the physical and mechanical changes in steel surface strengthened by rolling. It was proposed to check rolled parts of carbon steel by measuring their surface hardness by a Vickers test device with a 10 kg load, for this property is directly related with the surface microhardness, depth, degree and gradient of work hardening. A qualitative interdependence had been revealed in some cases between the strengthening and the microgeometry of the surface. Candidate of Technical Sciences Docent G.A. Pinchuk (Vecherniy mashinostroitelnyy institut, Perm' - Perm' Machine Building Evening Institute) reported

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A161/A029

Scientific-Technical Conference on Strengthening Technology

on experiments with combination of heat treatment with rolling with rollers or shot blasting. Technological processes had been developed that raised the durability of steel under repeated application of dynamic load by 2 to 2.5 times. ✓
Engineer M.I. Moldavskiy (Sovnarkhoz Laboratory at the mentioned Evening Institute) reported on investigations of rolling stainless steel by ball strengtheners. It considerably raised the wear-resistance of parts that could not be treated chemico-thermically or made of material with higher wear-resistance. Staff Member M.S. Nemancov (of the Evening Institute) reported that rolling raised the fatigue resistance of mine locomotive axles of "45" steel and the method is being introduced into use at a plant. The reports of Candidates of Technical Sciences N.M. Savvina (TsNIITMASH) and M.I. Razikov (UPI im. Kirov, Sverdlovsk) dealt with experiments with hammering welded joints and heat-affected zone for raising fatigue-resistance and with problems of raising the mechanical strength of welded joints by hammering. Engineer V.P. Vislobokov (UPI im. Kirov, Sverdlovsk) spoke of strengthening parts by centrifugal rolling over with balls or rollers placed in a special holder. The method is suitable for raw as well as quenched steel of any hardness. Candidate of Physico-Mathematical Sciences, Docent I.F. Vereshcha-

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S/122/60/000/007/011/011
A161/A029

Scientific-Technical Conference on Strengthening Technology

gin (Perm' State University) reported on the increase of static strength of low-carbon steel by three-dimensional plastic deformation. It was proven in a work carried out by him and Engineers L.K. Muryleva and G.S. Khlebutin that strengthening by twisting raised the static strength of steel by 75% and the work temperature could be raised to 400°C without any noticeable strength drop of parts. The conference took a decision determining the trend of further research and practical use of strengthening technology in the machine industry of the Perm' economic region. ✓

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SHIF, I.M., kand.tekhn.nauk (Perm')

Conference on metal-hardening techniques. Mashinostroitel' no.8:
41 Ag '60.

(Metals—Hardening)

(MIRA 13:9)

SHIF, I.M., kandidat tekhnicheskikh nauk.

Quality of the thread surfaces formed by two rollers. Trudy
Ural.politekh.inst. no.50:171-193 '56. (MLRA 9:11)
(Screw threads)

SHIF, I.M.

Committee on hardening techniques. Mashinostroitel' no.5:48
My '60. (MIRA 14:5)

(Metals--Hardening)